



Dart Aerospace Ltd.
1270 Aberdeen St
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Canada

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D212-664-107TRN
Job Sheet 182402



Part No: D212-664-107TRN

Job Qty: 1 ea

Part Name: Crosstube Turning Detail



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 8/23/18

Job Tracking No:

Due Date: 9/14/18

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG REV C IPP Rev:A New Issue 08-03-06 DD Verified by:ec IPP Rev B Removed polish 08.04.02 EC verified: DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea	9/14/18	9/14/18	0.00	0.00	Start Up Crosstubes-1		MD
100	Mori Seiki	1 pcs	9/14/18	9/14/18	2.14	2.43	Mori Seiki TL-40		MD
110	QC	1 pcs	9/14/18	9/14/18	0.00	0.00	QC2-1		MD
120	Mori Seiki	1 pcs	9/14/18	9/14/18	0.00	2.43	Mori Seiki TL-40		MD
130	QC	1 pcs	9/14/18	9/14/18	0.00	0.00	QC2-1		MD
140	QC	1 pcs	9/14/18	9/14/18	0.00	0.00	QC8		MD
145	Crosstubes	1 pcs	9/14/18	9/14/18	0.00	0.82	Crosstubes-1		MD
150	HandFXtube	1 pcs	9/14/18	9/14/18	0.00	1.01	Crosstubes-3		MD
160	QC	1 pcs	9/14/18	9/14/18	0.00	0.00	QC7-1		MD
170	Packaging	1 pcs	9/14/18	9/14/18	0.00	0.00	Packaging3-1		MD
180	QC21-SA	1 Ea	9/14/18	9/14/18	0.00	0.00	QC21		MD

Part Op 100 - 1-Fill tube with sand & install plugs 212-107on both ends as per Folio FA705 2-Face both sides 3-Turn first taper Descriptions: section on both sides as per Folio FA705 4-Blend transition lines only,use belt sander with 60 grit sandpaper **do not sand whole tube**:

120 - 1-Turn second taper on both sides as per Folio FA705 DWG REV: _____ 3- Remove plugs and sand

130 - perform ultra sonic messurment.

145 - GRIND ONLY TRANSITION LINES SMOOTH LONGITUDE WAY.

150 - 1- handfinish X-TUBE INSIDE AND OUT

170 - LOCATION : LG014

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D6019-128	Crosstube Material	1 Ea (1 ea)	90-Start up Operation	

B75635

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D6019-128	1	105	0

Part Specifications

Specifications could not be found.



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Container No: S106819



Part: D212-664-107TRN

Job No: 182402

Serial No/Batch: S106819

Revision: C

Inspector:

Exp Date:

Instructions:

Date: 06/30/18

13

200

44

100

12

100

3

DART AEROSPACE LTD	Work Order: 182402
Description: Crosstube Assembly (205/212/412 Low Fwd)	Part Number: D212-664-147
Inspection Dwg: D212-664-147 Rev: C	Page 1 of 2

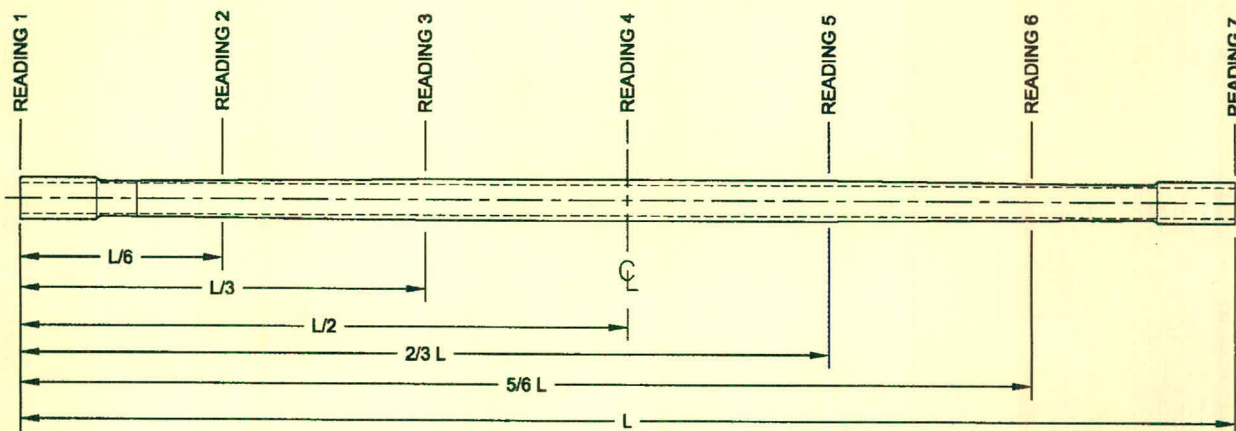
FIRST ARTICLE INSPECTION CHECKLIST

	Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	0.313	+/-0.010	.309	✓		cnc-08	
	2.360	+0.005/-0.000	2.365	✓		cnc-04	
	2.360	+0.005/-0.000	2.365	✓			
	2.366	+0.005/-0.000	2.371	✓			
	2.473	+0.005/-0.000	2.478	✓			
	2.573	+0.005/-0.000	2.577	✓			
	2.673	+0.005/-0.000	2.677	✓			
	2.750	+0.005/-0.000	2.750	✓			
	2.750	+0.005/-0.000	2.749	✓			stock under .001
SIDE B	0.313	+/-0.010	.317	✓		cnc-08	
	2.360	+0.005/-0.000	2.365	✓		cnc-04	
	2.360	+0.005/-0.000	2.365	✓			
	2.366	+0.005/-0.000	2.371	✓			
	2.473	+0.005/-0.000	2.378	✓			
	2.573	+0.005/-0.000	2.577	✓			
	2.673	+0.005/-0.000	2.677	✓			
	2.750	+0.005/-0.000	2.748	✓			stock under .002
	2.750	+0.005/-0.000	2.748	✓			stock under .002
	0.126.528	+/-0.020	126.520	✓		Tape	

3

DART AEROSPACE LTD		Work Order:	112402
Description: Crosstube Assembly (205/212/412 Low Fwd)		Part Number:	D212-664-147
Inspection Dwg: D212-664-147 Rev: C		Page 2 of 2	

WALL THICKNESS MEASUREMENT



Location	WALL THICKNESS MEASUREMENT (IN)				Deviation Δw (max-min)	TOLERANCE
	w1	w2	w3	w4		
READING 1 L= 0"	.147	.136	.120	.121	.027	0.048"
READING 2 L= 21.088	.170	.156	.149	.159	.021	
READING 3 L= 42.176	.322	.314	.303	.308	.019	
READING 4 L= 63.264	.332	.330	.319	.317	.015	
READING 5 L= 84.352	.319	.314	.305	.308	.014	
READING 6 L= 105.44	.169	.158	.152	.160	.017	
READING 7 L= 126.528	.133	.133	.131	.127	.006	

Calibration Result

Actual Block Thickness: 100-400

Sitescan 250 Measured Thickness: 100-400

Measured by:	MD	Audited by:	GP	Preliminary Approval:	
Date:	2018-08-29	Date:	2018-10-24	Date:	

Rev	Date	Change	Revised by	Approved
A	08.11.07	New Issue (P/O D212-664-107)	KJ/EC	
B	10.02.02	Dimension 126.528 was 126.53	KJ	
C	12.06.04	Wall thickness form added	KJ	
D	15.05.14	Dwg Rev updated	KJ	

Item	Qty -147	Qty -147B	Part Number	Description
1	X		D212-664-147	CROSSTUBE ASSEMBLY (205/212/412 LOW FWD)
2		X	D212-664-147B	CROSSTUBE ASSEMBLY (214 LOW FWD)
3	1	1	D6019-128	CROSSTUBE
4	2		D2893-1	SUPPORT
5	4	4	D3595-063-450	RUBBER CUSHION
6	2	2	D3659-1	CUFF
7		2	D5017-1	SUPPORT
8	4	4	MS21920-25	CLAMP (OR MS21920-26)
9	44	44	CR3212-4-06	RIVET (OR M7885/3-4-06)
10	A/R	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2
11	A/R	A/R	SIKAFLEX-241/-291	SEALANT (OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6019-128
FINISHED LENGTH = 126.528±0.020 (BEFORE BENDING/TRIMMING)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: D212-664-147/-147B = 24.2 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

MACHINING

- 10) WHEN MACHINING TAPER, RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.

BENDING

- 11) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D., EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.
- 12) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.

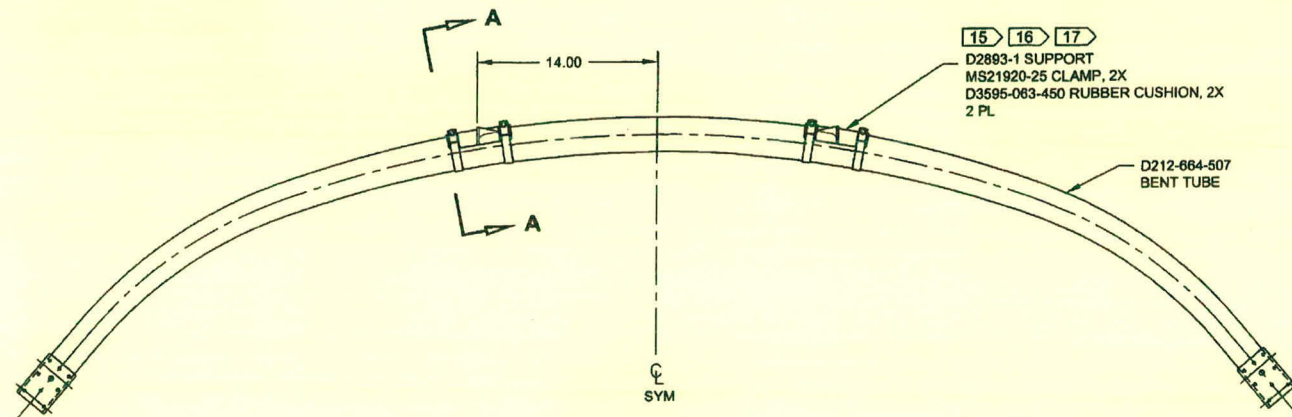
ASSEMBLY

- 13) INSTALL D3659-1 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A LAYER OF SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN CUFF AND CROSSTUBE. SEAL EDGE OF CUFF TO ENSURE NO GAPS.
- 14) TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.
- 15) INSTALL D2893-1 / D5017-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 16) INSTALL MS21920-25 CLAMPS (OR -26) WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE ON TOP SIDE OF CROSSTUBE.
- 17) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

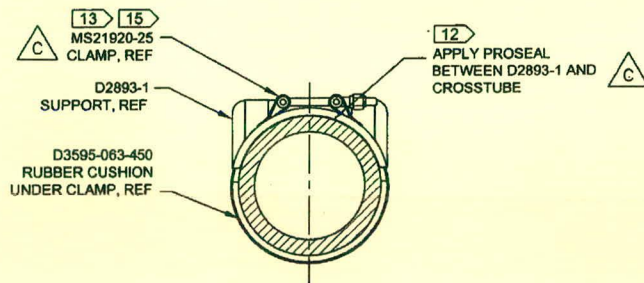
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NO. 182402 MWS
1808-23

RELEASED
2014-05-26

C	D5017-1 WAS D2893-1 (-147B). PROSEAL WAS MAGNOBOND, ADD SHEET 3, NOTE 18: ADD 72HR CURE & RETORQUE. CLAMPS REVERSED TO PREVENT CHAFING (ZN B7-2, B7-3). INCORP DEO B-1	CP	14.04.01
B	REVISE GENERAL NOTES/PART LIST; UPDATE TO CURRENT STANDARDS; ADD -147B (ZN C4-2, D4-2)	RF	09.09.30
A	NEW ISSUE	CP	07.07.07
REV.	DESCRIPTION	BY	DATE
DESIGN	90	DART AEROSPACE LTD	
DRAWN	90	HAWKESBURY, ONTARIO, CANADA	
CHECKED	DW	DRAWING NO.	REV. C
MFG. APPR.	Red	D212-664-147	SHEET 1 OF 5
APPROVED	AM	TITLE	SCALE
DE APPR.	AM	CROSSTUBE (205/212/412 LOW FWD)	NTS
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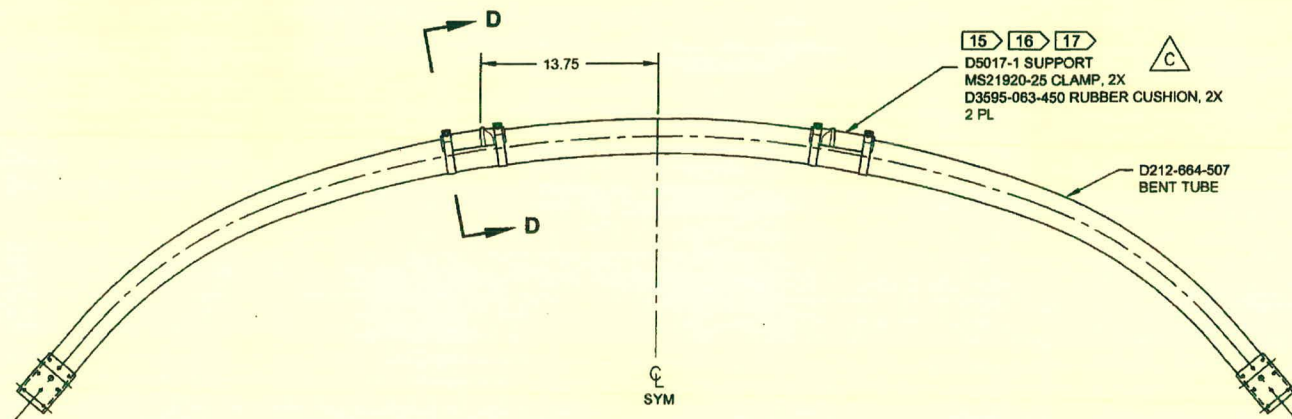
**D212-664-147
ASSEMBLY DETAIL**



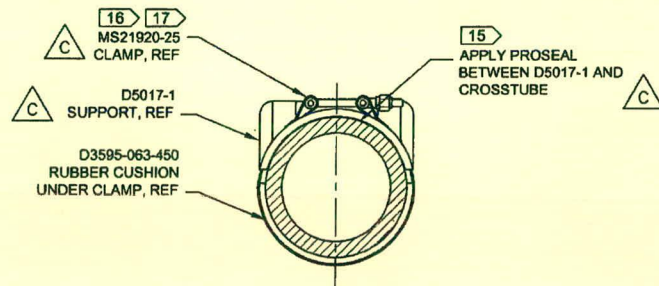
**SECTION A-A
SCALE 4X**

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2014-05-26

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MFG. APPR.		D212-664-147	SHEET 2 OF 5
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DE APPR.		CROSSTUBE (205/212/412 LOW FWD)	NTS
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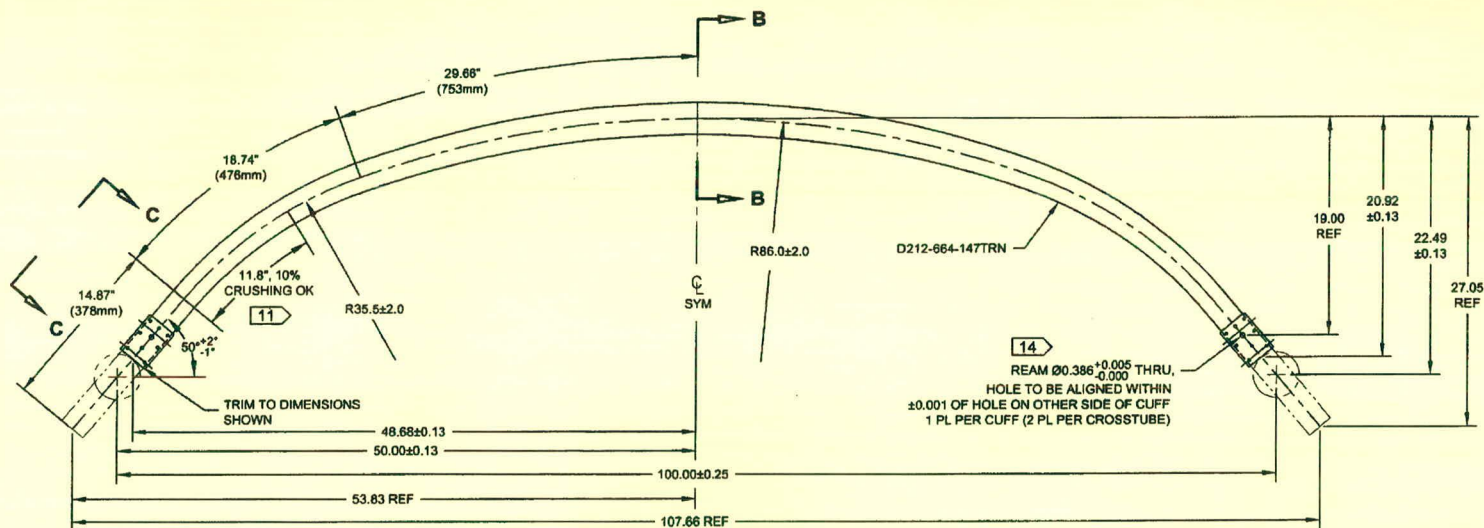
D212-664-147B
ASSEMBLY DETAIL



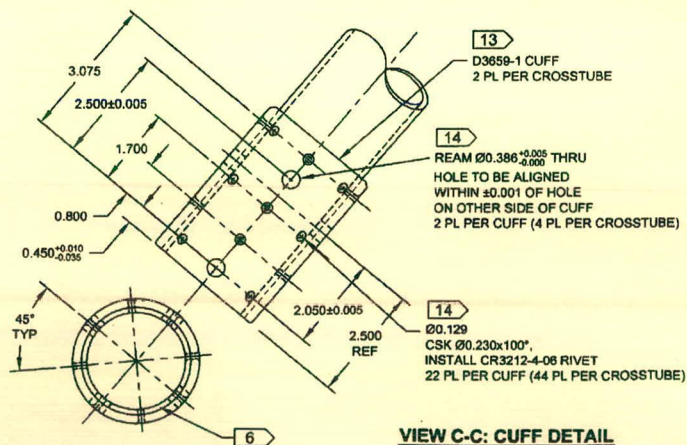
SECTION D-D
SCALE 4X

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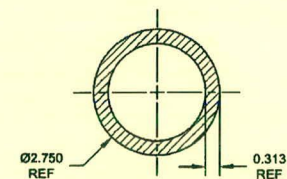
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MFG. APPR.		D212-664-147	SHEET 3 OF 6
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D212-664-507
BENDING AND DRILLING DETAIL 11



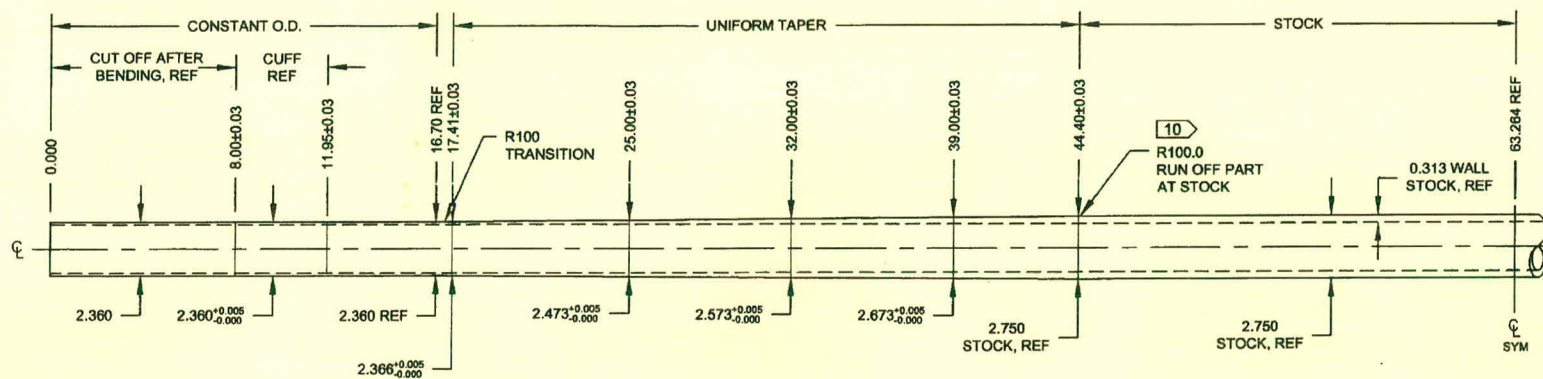
VIEW C-C: CUFF DETAIL
 SCALE 4X



SECTION B-B
 SCALE 4X

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D212-664-147TRN
TURNING DETAIL

DELCA
2014-05-26
WMD

DESIGN	90	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	90		
CHECKED	DW	DRAWING NO.	REV. C
MFG. APPR.		D212-664-147	SHEET 5 OF 5
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